

REMARKS

At the outset, the Examiner is thanked for the review and consideration of the pending application. The Final Office Action dated July 8, 2011 has been received and its contents carefully reviewed.

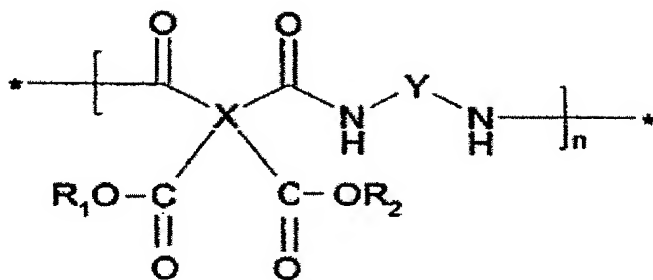
Claim 1 has been amended. Support for this amendment can be found at, for example, ¶¶ [0015] and [0031] of the present specification. No new matter has been added. Claims 1 and 3-17 are currently pending, of which claims 4-17 are withdrawn from consideration. Reexamination and reconsideration of claims 1 and 3 are respectfully requested.

In the Office Action, claims 1 and 3 are rejected under 35 USC §103(a) for allegedly being obvious over US Patent Publication 20020055610 (herein “*Okada*”) in view of US Patent 5,474,876 (herein “*Haehnle*”). The Applicant respectfully traverses the rejection.

In order to establish *prima facie* obviousness of the claimed invention, all the elements must be taught or suggested by the prior art. The combined teachings of *Okada* and *Haehnle* fail to teach or suggest every element of claims 1 and 3, and thus, cannot render these claims obvious.

Amended claim 1 recites, “polyimide precursor having the structure in the following Chemical Formula 1:

<Chemical Formula 1>



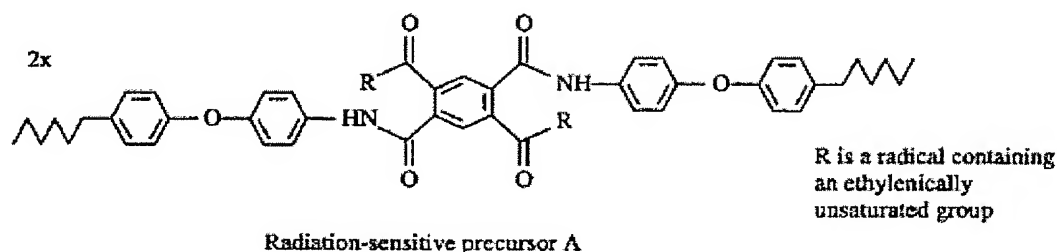
...where...R₁ and R₂ are, independent of each other, a hydrogen atom or an organic group having 1 to 20 carbon atoms including one or more ethylenically unsaturated bond(s), provided that R₁ and R₂ are not hydrogen atoms at the same time...wherein R₁ and R₂ including one or more ethylenically unsaturated bond(s) are derived from one or more compounds selected from the group consisting

of allyl glycidyl ether, glycidyl acrylate, glycidyl methacrylate, 3,4-epoxycyclohexylmethyl acrylate, 3,4-epoxycyclohexylmethyl methacrylate, glycidyl 5-norbornene-2-carboxylate (a mixture of endo and exo forms), glycidyl 5-norbornene-2-methyl-2-carboxylate (a mixture of endo and exo forms), 1,2-epoxy-5-hexene, and 1,2-epoxy-9-decene.”

Okada fails to teach or suggest at least these features of claim 1. As agreed by the Examiner during the telephone interview dated October 21, 2010, *Okada* fails to teach or suggest “R₁ and R₂ are, independent of each other, a hydrogen atom or an organic group having 1 to 20 carbon atoms including one or more ethylenically unsaturated bond(s), provided that R₁ and R₂ are not hydrogen atoms at the same time.” In fact, *Okada* only discloses a polyamic acid structure where “R₁ and R₂ are hydrogen atoms at the same time.” See *Okada*, ¶¶ [0037], [0042], [0074] and [0088]. This is the exact situation claim 1 avoids. Nowhere does *Okada* teach or suggest that R₁ and R₂ can be anything other than a hydrogen atom.

In order to cure the deficiency of *Okada*, the Office Action relies on *Haehnle*. This combination, however, fails to establish *prima facie* case of obviousness.

Haehnle discloses the following structure:



See *Haehnle*, page 2.

As the Office Action indicated in page 3, *Haehnle* only teaches that R group of the above “Radiation-sensitive precursor A” compound is derived from allyl alcohol for producing a half-ester. See *Haehnle*, col. 3, lines 24-29. However, *Haehnle* fails to teach or suggest that the R group is “derived from one or more compounds selected from the group consisting of allyl glycidyl ether, glycidyl acrylate, glycidyl methacrylate, 3,4-epoxycyclohexylmethyl acrylate, 3,4-epoxycyclohexylmethyl methacrylate, glycidyl 5-norbornene-2-carboxylate (a mixture of

endo and exo forms), glycidyl 5-norbornene-2-methyl-2-carboxylate (a mixture of endo and exo forms), 1,2-epoxy-5-hexene, and 1,2-epoxy-9-decene” as recited in claim 1.

In addition, *Haehnle* states that the above “Radiation-sensitive precursor A” compound is unfavorable (*See Haehnle*, col. 3, line 50 - col. 5, line 20), and *Haehnle* provides a preferred compound (I) which also simultaneously employs a hydrogen atom at both the “R₁ and R₂” position similar to *Okada* which is the exact situation claim 1 avoids. *See Id.*, col. 5, lines 1-20.

Accordingly, even with *Okada* and *Haehnle*, it would not have been obvious to one of ordinary skill in the art to arrive a polyimide precursor where “R₁ and R₂ are, independent of each other, a hydrogen atom or an organic group having 1 to 20 carbon atoms including one or more ethylenically unsaturated bond(s), provided that R₁ and R₂ are not hydrogen atoms at the same time...wherein R₁ and R₂ including one or more ethylenically unsaturated bond(s) are derived from one or more compounds selected from the group consisting of allyl glycidyl ether, glycidyl acrylate, glycidyl methacrylate, 3,4-epoxycyclohexylmethyl acrylate, 3,4-epoxycyclohexylmethyl methacrylate, glycidyl 5-norbornene-2-carboxylate (a mixture of endo and exo forms), glycidyl 5-norbornene-2-methyl-2-carboxylate (a mixture of endo and exo forms), 1,2-epoxy-5-hexene, and 1,2-epoxy-9-decene” as recited in claim 1 without any further evidence.

For at least the aforementioned reasons, claim 1 is allowable over the combined teaching of *Okada* and *Haehnle*. Likewise dependent claim 3 is also allowable for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the 35 U.S.C. §103(a) rejection of claims 1 and 3.

The application is in condition for allowance. Early and favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. § 1.136, and any additional fees required under 37 C.F.R. § 1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

Dated: October 10, 2011

Respectfully submitted,

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